

One Network to Rule Them All

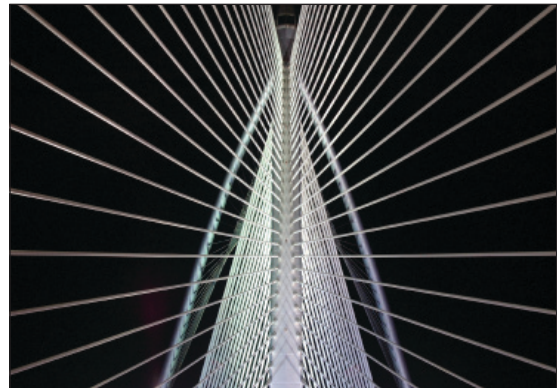
By Jesse Cryderman

Right now there are large billboards all around the city of Chicago with lightning bolts and bold colors, proclaiming the promise of 4G and LTE. The ads are also plastered on buses and inside trains—it's difficult to escape them. I recently flew to Florida, and on the plane, every seat-back tray was emblazoned with the same marketing.

**There's only one problem:
customers buy and consume services, not networks.**

No one waiting on a CTA train platform leans over to their neighbor to say, "Hey, check out this LTE network." On the other hand, innovative mobile apps and services almost invite inquiry. A real-time train travel tracker, for instance, will certainly become part of that on-platform conversation when there is a delay. Depositing a check into your bank account by snapping a pic with your phone? Brilliant. Offering Youtube content on the LTE network that looks just like a 3G network? Boring. If someone is watching the new episode of American Horror Story on their tablet on the train, I'm likely to ask how. They're unlikely to respond with a description of the network technology.

Herein lies the challenge for service providers. Demand is up, people want cool, and they want it anywhere, at anytime, and at a reasonable quality of service (QoS). But while traffic is growing over 30 percent per year, revenues are not. Internet



connectivity alone isn't compelling because it's not unique and exists everywhere, and simply jacking up the speedometer might enable a better experience down the road, but it's costly, and there is considerable investment in legacy systems that can't be ignored. Speed badges don't equal QoS either; offering high-speed connectivity, but subsequently throttling it in order to deploy "4G" service to more customers, is a losing bid in the end. Further, bandwidth and speed are useless in a service vacuum—they are utilities.

VoIP /VoLTE/VoC, IPTV, enterprise unified communications, a rise in cloud solutions—all of these increasingly popular services and their transport technology have driven the metered migration to a single, all-IP network. The race to 4G is on, and rightfully so; network convergence promises

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to enable rapid sale, deployment, management, and support of new services across multiple devices, and at a reduced cost. A discussion of how carriers are undertaking this journey is important, and there are lessons to be learned from some of the smaller carriers who are well on their way to an all-IP reality. There are also some inventive solutions that enable uninterrupted interoperability with legacy systems as carriers move forward to a single network.

However, while the migration to all-IP is happening, it's not the whole story; ubiquitous access to the Internet threatens to relegate CSPs to commodity status if they don't leverage the collective strength of their existing networks in innovative ways to provide unique, converged, and desirable services to their customers across multiple devices.

Different Flavors of Convergence

Like many buzzwords, convergence has been appropriated by a multitude of solutions that effectively collapse siloed activities into a unified architecture. There are unified communications solutions that wave the convergence flag. Then there's convergent billing, and fixed/mobile convergence. To better understand the different flavors of convergence, let's divide the group into four categories. The four "Cs" of convergence are easy to remember by the acronym DUNS:

Device Convergence: Devices that support multiple

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access technologies, like dual-mode phones, internet-connected set-top boxes (STBs), or enhanced multimedia terminals (eMTAs) that provides both internet access and VoIP services.

- **User Convergence:** Instances such as single-login, unified billing, unified support, unified communications, etc.
- **Network Convergence:** The ability to leverage multiple networks to create unique services utilizing differing access technologies
- **Service Convergence:** Converging multiple services together for a unique service experience such as mobile TV or TV Caller ID.

For this article, we're primarily talking about network convergence, and related user convergence. This is Convergence with a capital "C." "Network convergence is the seamless handoff of content across multiple devices. It's about a fluid front-end user experience backed by fully integrated back



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office operations,” says Marc Hayden, executive vice president, Sales and Marketing at CHR Solutions. “It’s no longer about getting just one bill—but all forms of communication, media, entertainment and social networking through one channel.”

There are obvious advantages to a converged network. Managing voice and data with the same system is intuitively more efficient than operating and billing across two separate platforms. A network operating with near-real-time response can be rapidly configured for new services, user profiles, or devices.

Jimmy Mizrahi, NG optical networking product line manager, ECI Telecom, described some specific benefits in further detail: “Converged solutions: reduce the total cost of the solution (less equipment, spare inventory, power consumption, real estate, connectivity between systems); simplify network operation (same look and feel for all network layers, simplify network troubleshooting, single interface to OSS system); and optimize the network resources (traffic is groomed by the appropriate layer and therefore network resources are optimized).”

The deeper promise of the converged network, however, is the way it can be leveraged to enhance service experience and deepen the customer relationship. “Network convergence creates a brand-new type of relationship with the end user that reaches beyond providing services and ingratiates the provider as an integral part of the customer’s lifestyle,” said Marc Hayden. This is the kind of thinking CSPs need to embrace to ensure their relevance in the future.

The Challenge of IP-Migration

Dialogic, a vendor with a solution that enables IP services over TDM networks explained one of the challenges to all-IP migration in a recent white paper. “Since TDM technology still serves the industry well, most carriers and businesses are moving to IP at a judicious pace and taking advantage of their sizeable investment in TDM by continuing to use it during this time of transition.”

It appears, as one might expect, that carriers with the most money in the ground (cable, fiber, copper, cell towers), are taking a more measured approach to all-IP migration. I asked Marc Hayden, whose company has driven multiple network transformation projects

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for CSPs, about the rate of adoption. “Network convergence is inevitable. It is also extremely complex and requires comprehensive due diligence. We’re seeing a rise in the adoption rate across the tiers, but it is a multi-faceted transformation that will take time to be fully realized.” So Who’s Migrating, and Who’s Championing Convergence?

As can be expected, network equipment manufacturers are beating the all-IP drum more loudly every year. And it’s not like they’re selling snake-oil; the new equipment is impressive, generally uses less power, and benefits from Moore’s Law like everything in technology. It’s just that carriers already own lots of top-end toys from the back catalog. Other loud proponents have arisen in the all-IP and IP-service camps, such as companies with a large play in SIP/VoIP, or businesses who have re-purposed their expertise in IP for telco.

Many of these solutions are already being used by smaller carriers that had the agility and liquidity to launch a transformation initiative. In Greece, Nokia Siemens Networks is already in phase two of a three-year network convergence contract with carrier Wind Hellas. A smooth migration of mobile EDGE services to the new convergent IP/MPLS network (using Juniper Networks’ equipment) has been realized.

More recently in France, in mid-November, Alcatel-Lucent launched an all-IP transformation at Bouygues Telecom. Stephen Carter, Alcatel-Lucent’s president for EMEA, noted providers are, “moving aggressively to transform their networks to IP in order to deliver exciting new services and manage costs.”

Cablecos are also beginning to turn the corner on all-IP. At the recent Cable-Tec Expo, Motorola’s Patrick Wright-Riley spoke about the transition to IP and the promise of a converged network for the cable industry. “MPEG is a very efficient way of delivering video, but IP allows you to align voice, video and data

down the same pathways,” said Wright-Riley. “Multi-screen is the driver for IP. IP is kind of forced upon us as we start seeing more and more video on the Internet, user-generated content, and over-the-top VOD players.”

Convergence: It's Not Just IP

While IP is the future of telecommunications, people are clamoring for innovative services now. No one is content to wait three years for a killer app. As we've said before, the end-user doesn't care about the network, she cares about the service and experience. The end-user wants to enjoy service across multiple platforms, so whether transport networks remain in silos, or are fully converged, they must be, “increasingly agnostic of the access technology,” says Monica Paolini, president, Senza Fili Consulting. “In wireless, the transition is still ongoing,” Paolini continued.

This is where the convergence discussion gets interesting.

Communications service providers are more than just networks. They possess several very unique characteristics that can be used to their advantage, regardless of how far along the IP-migration path they've walked:

- The ability to control and monitor quality across the networking
- Multiple viable legacy transport networks
- Voluminous customer data
- Partnerships with device manufacturers and content providers

Converging the value in these four areas to create, launch, deliver, and manage innovative services is absolutely possible. In their legacy networks, carriers possess transport that is still very viable, and can be re-purposed for M2M communications, backhaul, and reliable emergency communication service (something all-IP can't claim during a power outage). Converging the customer data from fixed, wireline, and mobile networks and applying contextually aware analytics across the spectrum can uncover myriad new business cases.

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Service providers can also leverage their wealth of customer data to fine-tune and personalize experiences in ways that OTT players simply cannot. Even before all-IP is here, CSPs can converge strengths in network monitoring and quality assurance with acute customer profile data and content partnerships to create new quality- and service-specific offerings, or value-charging propositions. Carriers can join hands with OTT video providers to deliver better quality of experience at a premium to customers.

The Game Must Change

Imagine a future where marketing from communications service providers focused on customer experience, and not network capability. It's something other service industries figured out a long time ago. As Chun-Ling Woon, vice president Business Development, Conceptwave, told Pipeline in our May Issue, “Battle of the Brands” article: “Networks are like armpits: everyone has them and they all stink. What's so interesting about your network? Does it stink slightly less than the other guy's?”

What if a carrier advertised the service capability of their converged networks—what if they highlighted a service that enabled you to watch content from all of your favorite (read: OTT) video providers anywhere with high quality, text message your spouse in a connected car, purchase the latest apps from any app store, and use a low-cost, reliable landline in an emergency all from one account, with one bill?

How much cooler is that than lightning bolts and speed claims? And, I might add, “cool” sells.